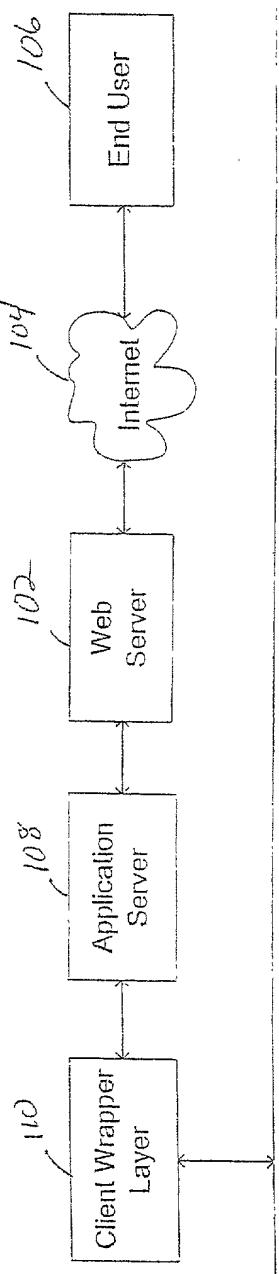
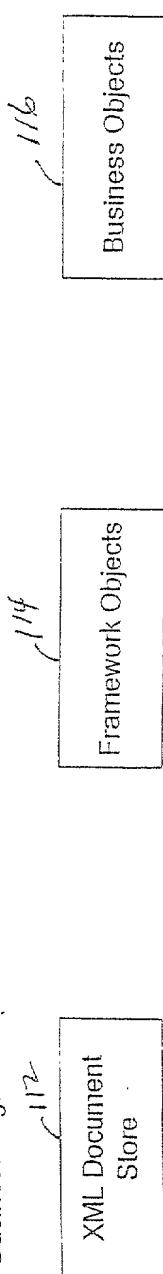


Fig. 1
System Architecture



Business Logic & Framework



CRS/Inventory Source Interfaces

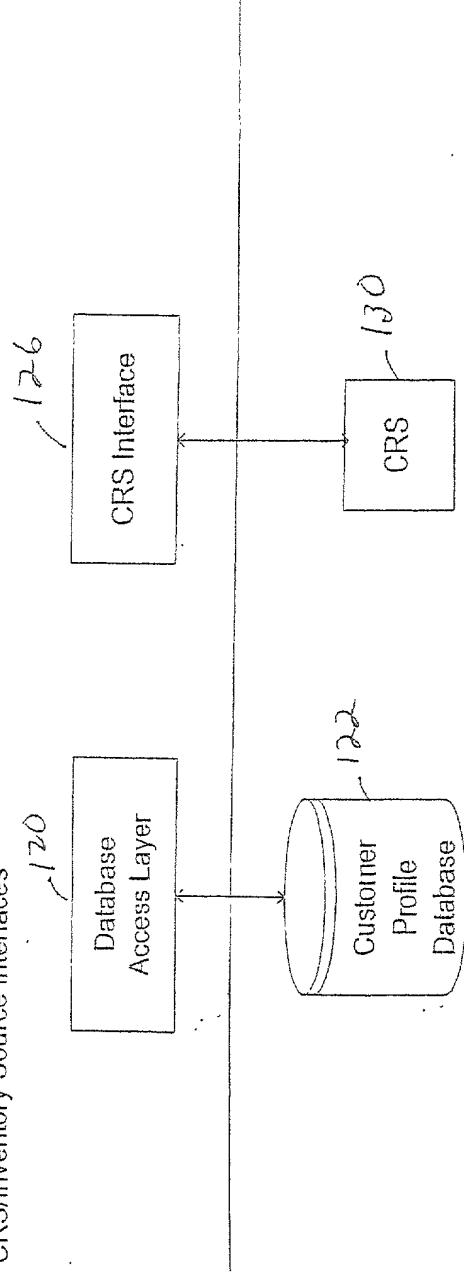


FIG. 2

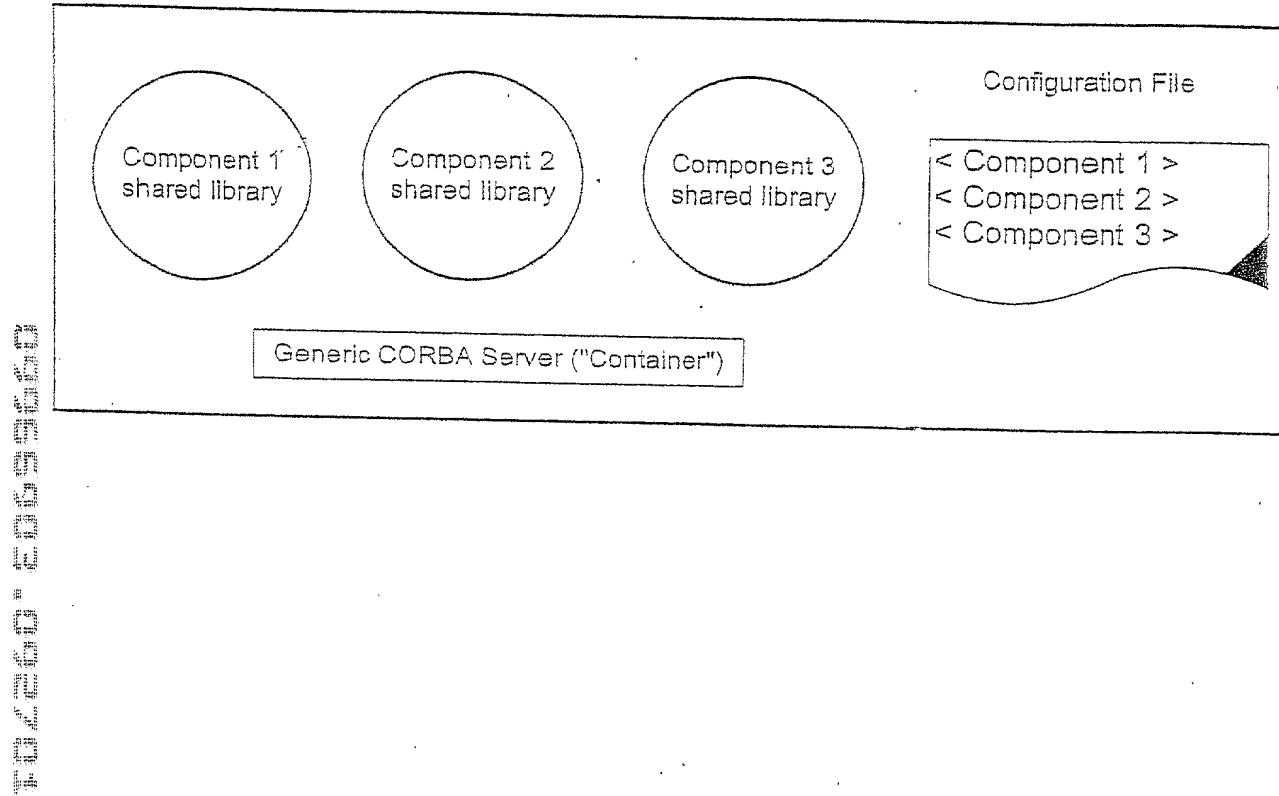
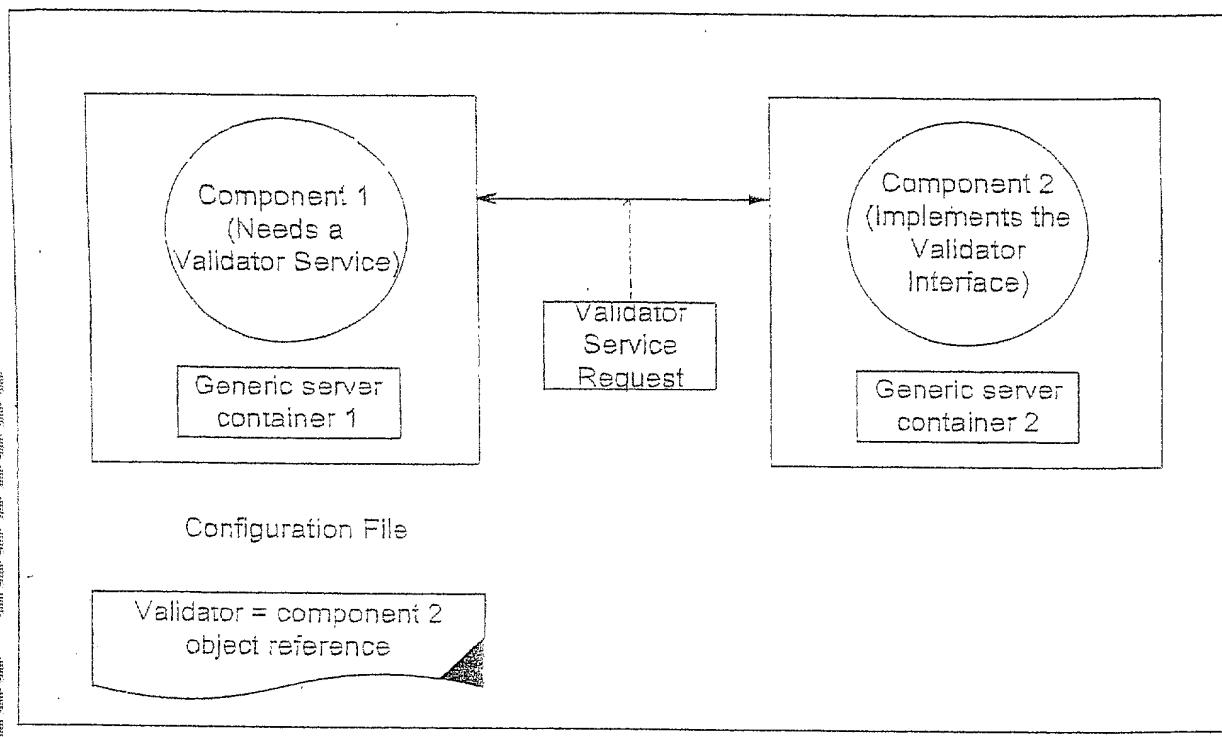


FIG. 3



```

<Server Name="Bk/CityCodeLookupSvr">
  <Attributes>
    <Simple Name="Timeout">0</Simple>
    <Simple Name="ThreadPolicy">thread-pool</Simple>
    <Simple Name="MaxThreads">20</Simple>
    <Simple Name="Description">This server contains components related to Car related Code
Lookups.</Simple>
    <Simple
Name="IncludeFile">/net/godzilla/usr2/BookSmart/v2.0/run/CORBA/TraderInclude.xml</Simple>
  </Attributes>
  <InternalComponents>
    <Component Name="CityCodeLookup">
      <Creator Name="ConverterCreator"
        Library="libSnsFrameworkConverterCreators.so"/>
      <Relationships>
      </Relationships>
      <Attributes>
        <Simple Name="ServiceType">CityCodeLookup</Simple>
        <Simple Name="SubstringMatch">True</Simple>
        <Simple Name="TagName">City</Simple>
        <Simple Name="CodeAttribute">Code</Simple>
        <Simple Name="NameAttribute">Value</Simple>
        <Simple Name="Library">libora12d0146.so</Simple>
        <Simple Name="Database">WG80</Simple>
        <Simple Name="UserName">BROADVISION</Simple>
        <Simple Name="Password">BROADVISION</Simple>
        <Simple Name="Table">BK_CITY_MAST</Simple>
        <Simple Name="CodeColumn">CITY_CODE</Simple>
        <Simple Name="NameColumn">CITY_NAME</Simple>
        <Simple
Name="CodeIsPrimaryColumn">ISPRIMARY_FLAG</Simple>
        <Sequence Name="Attributes" Type="Simple">
          <Simple
Name="AttributeColumn">COUNTRY_CODE</Simple>
          <Simple
Name="AttributeColumn">CURRENCY_CODE</Simple>
          <Simple
          </Sequence>
        </Attributes>
      </Component>
    
```

FIGURE 4A

FIGURE 4B

```

<Component Name="CityCodeStrictLookup">
    <Creator Name="ConverterCreator"
        Library="libSnsFrameworkConverterCreators.so"/>
    <Relationships>
    </Relationships>
    <Attributes>
        <Simple Name="ServiceType">CityCodeStrictLookup</Simple>
        <Simple Name="VerboseErrors">True</Simple>
            <Simple Name="SubstringMatch">True</Simple>
            <Simple Name="TagName">City</Simple>
            <Simple Name="CodeAttribute">Code</Simple>
            <Simple Name="NameAttribute">Value</Simple>
            <Simple Name="Library">libora12d0146.so</Simple>
            <Simple Name="Database">WG80</Simple>
            <Simple Name="UserName">BROADVISION</Simple>
            <Simple Name="Password">BROADVISION</Simple>
            <Simple Name="Table">BK_CITY_MAST</Simple>
            <Simple Name="CodeColumn">CITY_CODE</Simple>
            <Simple Name="NameColumn">CITY_NAME</Simple>
            <Simple
Name="CodeIsPrimaryColumn">ISPRIMARY_FLAG</Simple>
            <Sequence Name="Attributes" Type="Simple">
                <Simple
Name="AttributeColumn">COUNTRY_CODE</Simple>
                <Simple
Name="AttributeColumn">CURRENCY_CODE</Simple>
                <Simple
Name="AttributeColumn">ISVALIDHOTELRENTAL_FLAG</Simple>
                <Simple Name="AttributeColumn">DAL</Simple>
                <Simple
Name="AttributeColumn">ISETCARRIERCHECK</Simple>
            </Sequence>
        </Attributes>
    </Component>
</InternalComponents>
</Server>

```

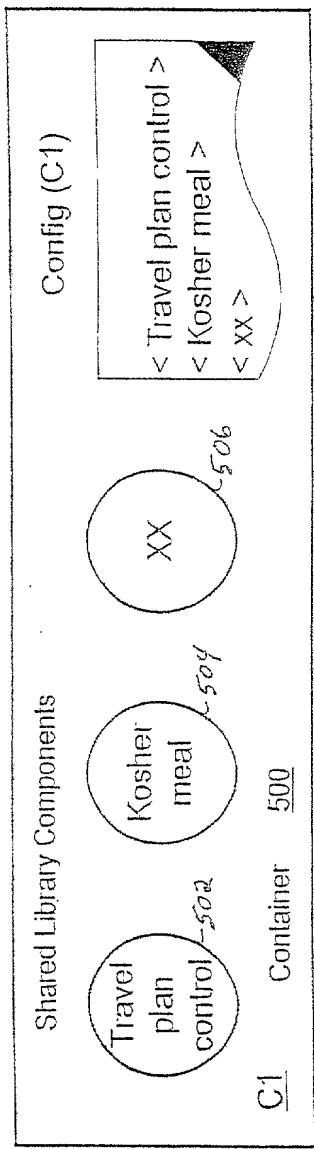


FIG. 5A

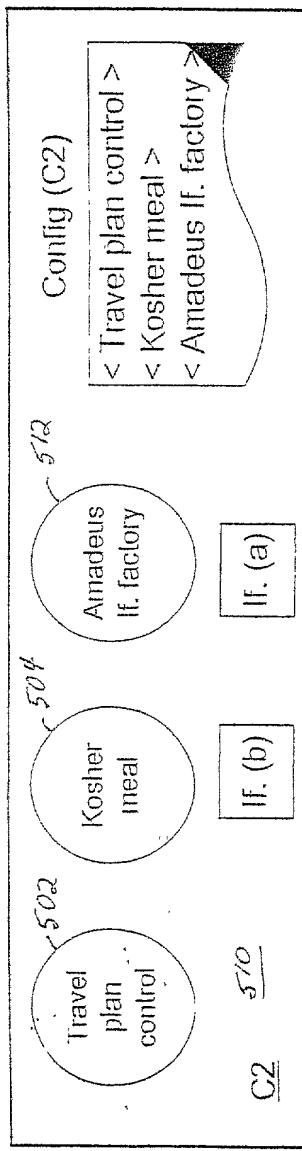


FIG. 5B

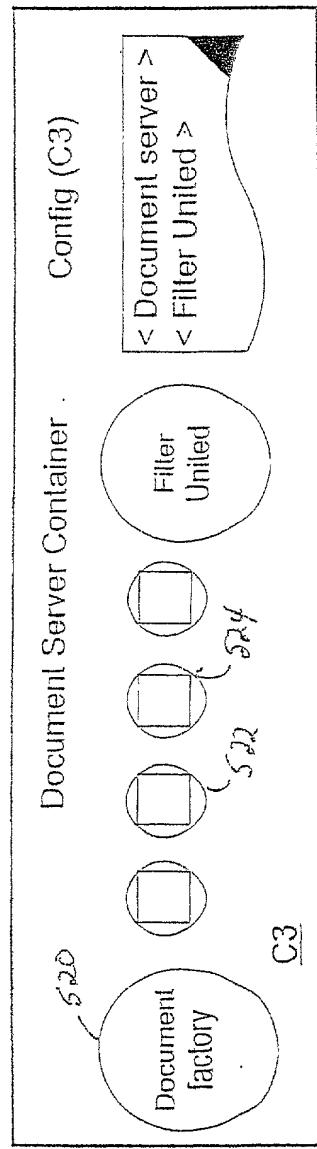
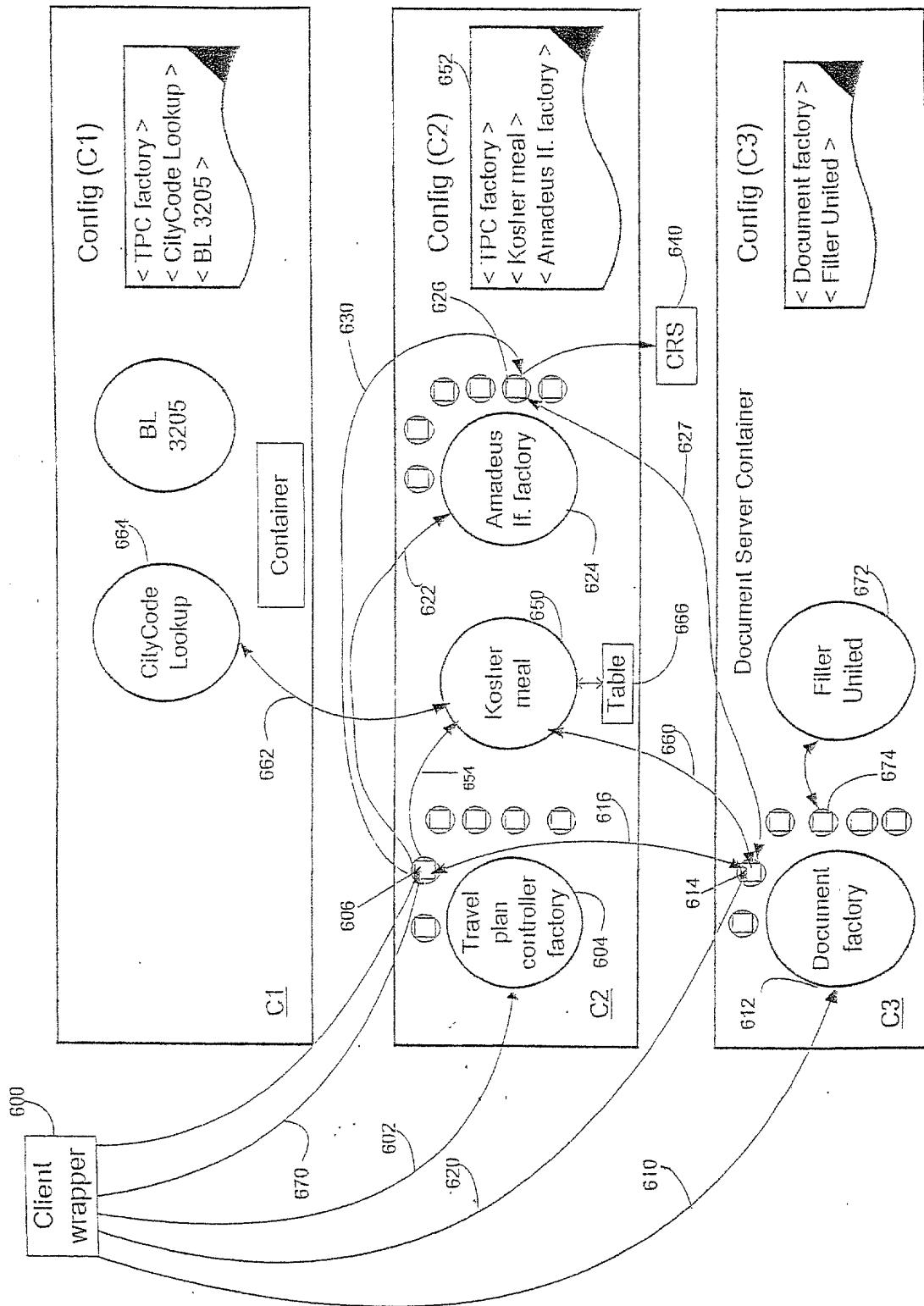


FIG. 5C

FIG. 6



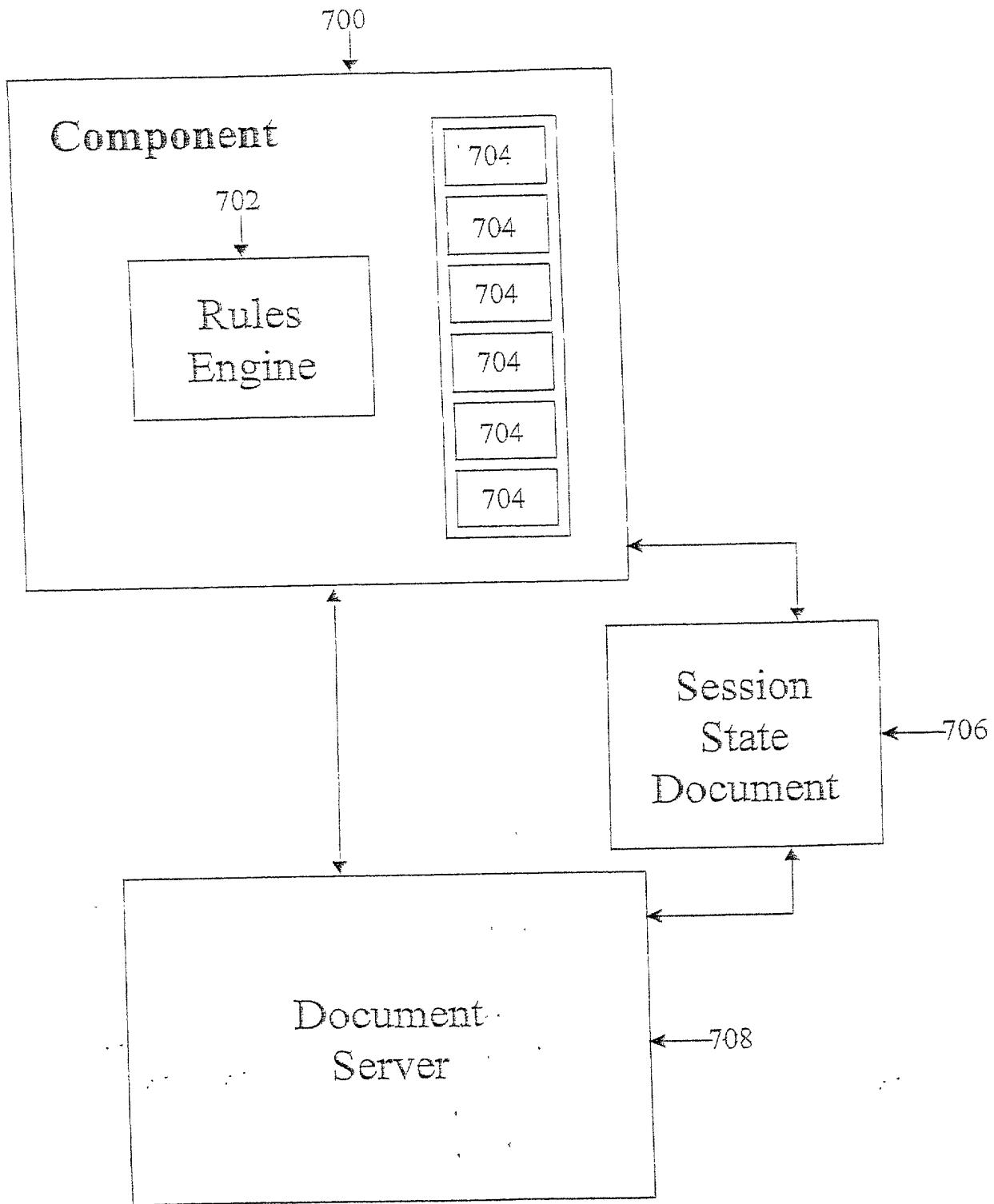


Fig. 7

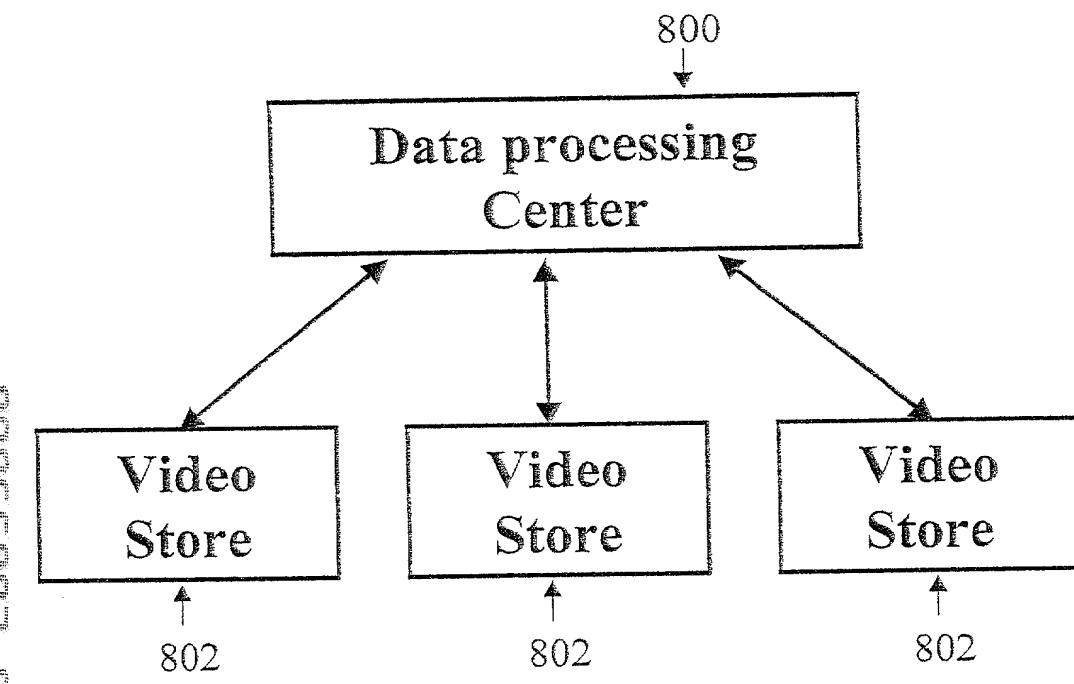
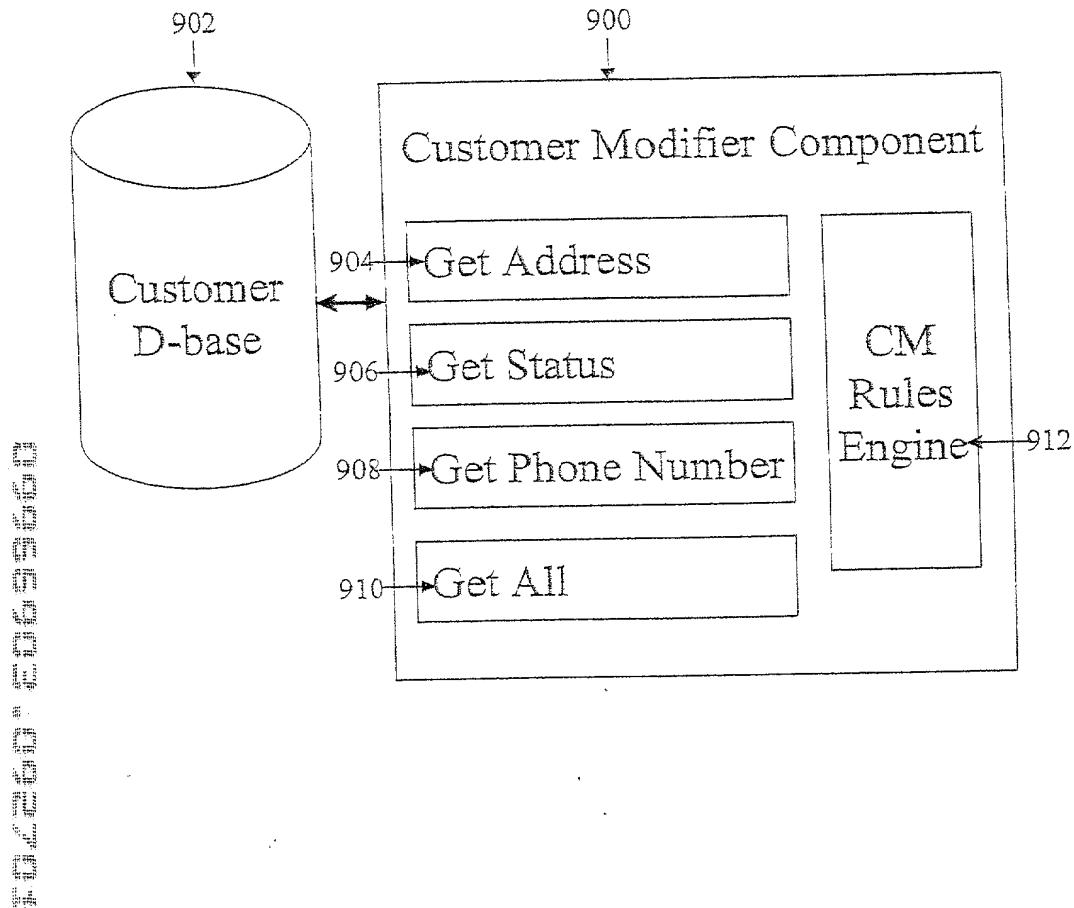


Fig. 8



Videostore
Local Machine

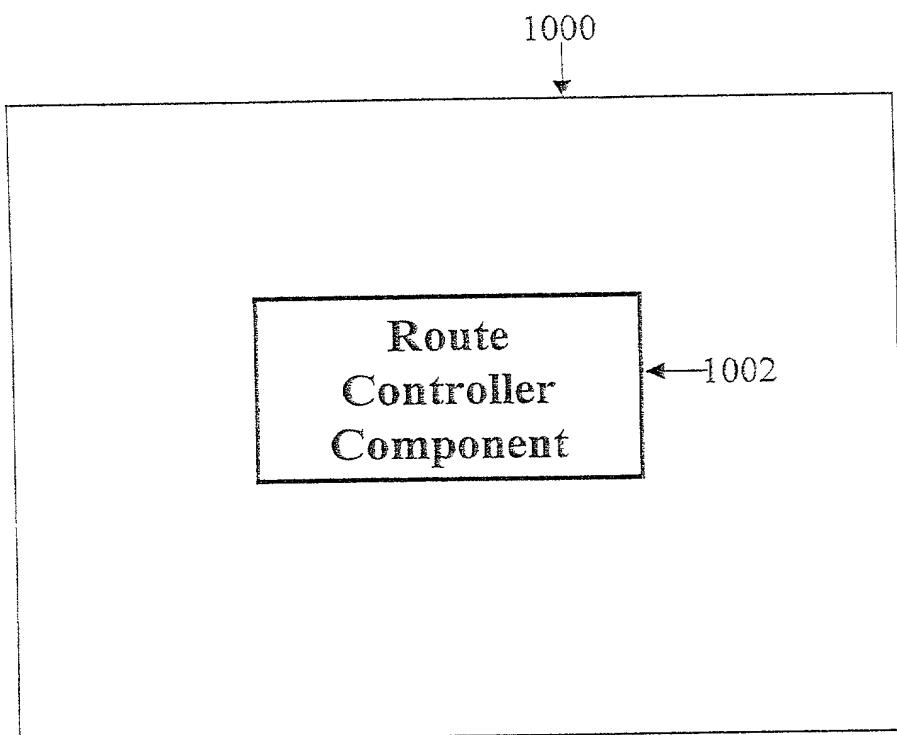


Fig. 10

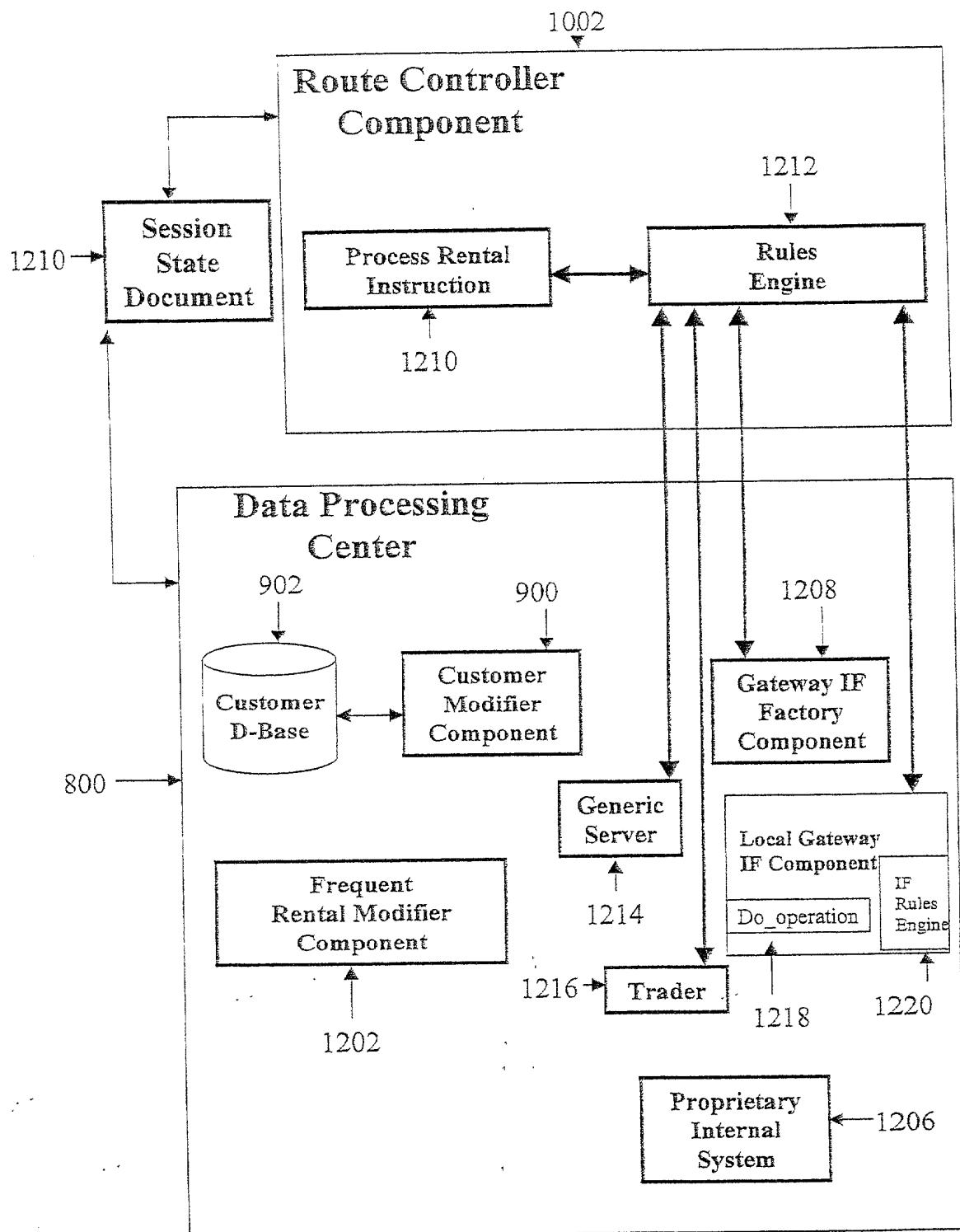


Fig. 12

Fig. 11A

RouteController's XML configuration file:

```

<Server Name="RouteControllerSrv">
  <Attributes>
    <Simple Name="ThreadPolicy">thread-pool</Simple>
    <Simple Name="MaxThreads">20</Simple>
    <Simple Name="IncludeFile">../TraderInclude.xml</Simple>
  </Attributes>
  <InternalComponents>
    <Component Name="RouteController">
      <Creator Name="SnSControllerCreator"
Library ="libSnSFrameworkControllerCreators.so"/>
      <Relationships>
        <Uses Name="RentalSetupModifier" Component="CustomerModifier"
Type="Modifier" PersistConnection="False"/>
        <Uses Name="PromotionalModifier" Component="FrequentRentalModifier"
Type="Modifier" PersistConnection="False"/>
        <Uses Name="GatewayIFFactory" Component="GatewayIFFactory"
Type="Modifier" PersistConnection="False"/>
      </Relationships>
      <RuleSet Name="Standard" Default="True">
        <Process Label="ProcessRental"
ReleaseResources="True" OnFail="Stop">
          <Acquire ResourceType="GatewayIF"
ResourceKey="GatewayIF"
Instruction="GatewayIFFactory" OnFail="Stop"/>
          <Component ComponentType="Controller"
Name="GatewayIF">
            FailIfNone="True" OnFail="Stop" Instruction="StoreRental">
              <Resource ResourceKey="InDocument" FailIfNone="True"/>
              <Resource ResourceKey="OutDocument" FailIfNone="True"/>
            </Component>
            <Component ComponentType="Modifier" Name="RentalSetupModifier"
FailIfNone="True" OnFail="Continue"
SpecialInstructions="Label="GetStatus" ">
              <Resource ResourceKey="InDocument" FailIfNone="True"/>
            </Component>
            <Process Query="Customer[@Status!= 'Normal'" OnFail="DoNothing">
              <Component ComponentType="Modifier"
Name="PromotionalModifier"
FailIfNone="True" OnFail="Stop"
SpecialInstructions="Label="ValuedPromo" ">
              <Resource ResourceKey="InDocument" FailIfNone="True"/>
            </Component>
          </Process>
          <Process Query="Customer[@Status='Normal'" OnFail="DoNothing">
            <Component ComponentType="Modifier"
Name="PromotionalModifier"
FailIfNone="True" OnFail="Stop"
SpecialInstructions="Label="RegularPromo" ">

```

Fig. 11B

```

<Resource ResourceKey="InDocument" FailIfNone="True"/>
</Component>
</Process>
<Process Query="Video[@Name='First Movie'" OnFail="DoNothing">
    <Variable Name="InsertQuery" ValueType="Literal">
        Promo[Code=U15]
    </Variable>
    <Instruction Name="Insert" OnFail="Stop">
        <Resource ResourceKey="OutDocument" FailIfNone="True"/>
    </Instruction>
    <Variable Name="InsertQuery" ValueType="Literal">
        Remark[Type=Important][Value ="Give customer free First Movie
        poster"]
    </Variable>
    <Instruction Name="Insert" OnFail="Stop">
        <Resource ResourceKey="OutDocument" FailIfNone="True"/>
    </Instruction>
</Process>
<Process Query="Promo" OnFail="DoNothing">
    <Component ComponentType="Controller" Name="GatewayIF"
        FailIfNone="True" OnFail="Stop"
    Instruction="StorePromoEntry">
        <Resource ResourceKey="InDocument" FailIfNone="True"/>
        <Resource ResourceKey="OutDocument" FailIfNone="True"/>
    </Component>
        </Process>
    </Process>
    <Process Label="DoNothing"/>
</RuleSet>
</Component>
</InternalComponents>
<ExternalComponents>
    <Component Name="CustomerModifier">
        <Locator Type="Trader" ID="CustomerModifier"/>
    </Component>
    <Component Name="GatewayIFFactory">
        <Locator Type="Trader" ID="GatewayIFFactory"/>
    </Component>
</ExternalComponents>
</Server>

```

Fig. 13

FrequentRentalModifier's XML configuration file:

```

<Server Name="FrequentRentalModifierSvr">
    <Attributes>
        <Simple Name="ThreadPolicy" >thread-pool</Simple>
        <Simple Name="MaxThreads" >20</Simple>
        <Simple Name="IncludeFile" >../TraderInclude.xml</Simple>
    </Attributes>
    <InternalComponents>
        <Component Name="FrequentRentalModifier">
            <Creator Name="FrequentRentalModifer"
                Library="libFrequentRentalModifierCreators.so"/>
            <Attributes>
                <Simple Name="ServiceType" >FrequentRentalModifier</Simple>
                <Simple Name="Library" Type="EnvVar" >SB_DB_LIBRARY</Simple>
                <Simple Name="Database" Type="EnvVar" >SB_DB_INSTANCE</Simple>
                <Simple Name="UserName" Type="EnvVar" >SB_DB_USER_NAME</Simple>
                <Simple Name="Password" Type="EnvVar" >SB_DB_PASSWORD</Simple>
                <Simple Name="Table" >SB_RESERVATIONS</Simple>
                <Simple Name="IDColumn" >ID</Simple>
                <Simple Name="RentalDateColumn" >RENTAL_DATE</Simple>
            </Attributes>
            <Relationships>
                <RuleSet Name="Standard" Default="True" >
                    <Process Label="RegularPromo" >
                        <Variable Name="DaysInPeriod"
                            ValueType="Literal" >30</Variable>
                        <Variable Name="RentalsRequired"
                            ValueType="Literal" >10</Variable>
                        <Variable Name="PromoCode" ValueType="Literal" >U11</Variable>
                        <Instruction Name="CheckQualification" OnFail="Stop" >
                            <Resource ResourceKey="InDocument" FailIfNone="True"/>
                            <Resource ResourceKey="OutDocument" FailIfNone="True"/>
                        </Instruction>
                    </Process>
                    <Process Label="ValuedPromo" >
                        <Variable Name="DaysInPeriod"
                            ValueType="Literal" >30</Variable>
                        <Variable Name="RentalsRequired"
                            ValueType="Literal" >5</Variable>
                        <Variable Name="PromoCode" ValueType="Literal" >U12</Variable>
                        <Instruction Name="CheckQualification" OnFail="Stop" >
                            <Resource ResourceKey="InDocument" FailIfNone="True"/>
                            <Resource ResourceKey="OutDocument" FailIfNone="True"/>
                        </Instruction>
                    </Process>
                </RuleSet>
            </Component>
        </InternalComponents>
    <ExternalComponents/>
</Server>
```

Fig. 14

GatewayIF's XML configuration file:

```

<Server Name="GatewayIFPSvr" >
  <Attributes>
    < Simple Name="ThreadPolicy" >thread-pool </Simple >
    < Simple Name="MaxThreads" >20 </Simple >
    < Simple Name="IncludeFile" >../TraderInclude.xml </Simple >
  </Attributes >
  <InternalComponents>
    <Component Name="GatewayIFFactory" >
      <Creator Name=""SnSFactoryCreator"
Library="libSnSFrameworkFactoryCreators.so"/>
      <ChildCreator Name="GatewayIFCreator"
Library="libGatewayIFCreators.so"/>
      <Relationships/>
      <Attributes>
        < Simple Name="ServiceType" >GatewayIFFactory </Simple >
        < Simple Name="Policy" >PoolAsNeeded </Simple >
        < Simple Name="ProductsAreGateways" >True </Simple >
        < Simple Name="PoolSize" >20 </Simple >
        < Simple Name="AvailableBuffer" >6 </Simple >
        < Simple Name="AvailableLimit" >10 </Simple >
        < Simple Name="MaintenanceThreads" >1 </Simple >
        < Simple Name="MaintenanceThreadWakeUp" >30 </Simple >
        < Simple Name="MakeIsValidCheckEachGet" >False </Simple >
        < Simple Name="MakeIsValidCheckPeriodically" >False </Simple >
        < Simple Name="PeriodicIsValidPause" >60 </Simple >
        < Simple Name="CreatorName" >GatewayIFCreator </Simple >
      </Attributes >
      <Children Name="GatewayIF" >
        <RuleSet Name="Standard" Default="True" >
          <Process Label="StoreRental">
            <Instruction Name="StoreRental" OnFail="Stop" >
              <Resource ResourceKey="InDocument" FailIfNone="True"/>
              <Resource ResourceKey="OutDocument" FailIfNone="True"/>
            </Instruction>
          </Process >
          <Process Label="StorePromoEntry" >
            <Instruction Name="StorePromoEntry" OnFail="Stop" >
              <Resource ResourceKey="InDocument" FailIfNone="True"/>
              <Resource ResourceKey="OutDocument" FailIfNone="True"/>
            </Instruction>
          </Process >
        </RuleSet>
      </Children >
    </Component >
  </InternalComponents >
  <ExternalComponents />
</Server>
```

Fig. 15

CustomerModifier's XML configuration file:

```

<Server Name="CustomerModifierSrv">
    <Attributes>
        <Simple Name="ThreadPolicy" >thread-pool</Simple>
        <Simple Name="MaxThreads" >20</Simple>
        <Simple Name="IncludeFile" >../TraderInclude.xml</Simple>
    </Attributes>
    <InternalComponents>
        <Component Name="CustomerModifier">
            <Creator Name="CustomerModifer" Library="libCustomerModifierCreators.so"/>
            <Attributes>
                <Simple Name="ServiceType" >erCustomerModifier</Simple>
                <Simple Name="Library" Type="EnvVar" >SB_DB_LIBRARY</Simple>
                <Simple Name="Database" Type="EnvVar" >SB_DB_INSTANCE</Simple>
                <Simple Name="UserName" Type="EnvVar" >SB_DB_USER_NAME</Simple>
                <Simple Name="Password" Type="EnvVar" >SB_DB_PASSWORD</Simple>
                <Simple Name="Table" >SB_CUSTOMER </Simple>
                <Simple Name="IDColumn" >ADDRESS</Simple>
                <Simple Name="AddressColumn" >ADDRESS</Simple>
                <Simple Name="StatusColumn" >STATUS</Simple>
                <Simple Name="PhoneColumn" >PHONE</Simple>
            </Attributes>
            <Relationships/>
                <RuleSet Name="Standard" Default="True">
                    <Process Label="GetAddress">
                        <Instruction Name="GetAddress" OnFail="Stop">
                            <Resource ResourceKey="InDocument" FailIfNone="True"/>
                            <Resource ResourceKey="OutDocument" FailIfNone="True"/>
                        </Instruction>
                    </Process>
                    <Process Label="GetStatus">
                        <Instruction Name="GetStatus" OnFail="Stop">
                            <Resource ResourceKey="InDocument" FailIfNone="True"/>
                            <Resource ResourceKey="OutDocument" FailIfNone="True"/>
                        </Instruction>
                    </Process>
                    <Process Label="GetPhoneNumber">
                        <Instruction Name="GetPhoneNumber" OnFail="Stop">
                            <Resource ResourceKey="InDocument" FailIfNone="True"/>
                            <Resource ResourceKey="OutDocument" FailIfNone="True"/>
                        </Instruction>
                    </Process>
                    <Process Label="GetAll">
                        <Instruction Name="GetAll" OnFail="Stop">
                            <Resource ResourceKey="InDocument" FailIfNone="True"/>
                            <Resource ResourceKey="OutDocument" FailIfNone="True"/>
                        </Instruction>
                    </Process>
                </RuleSet>
            </Component>
        </InternalComponents>
    <ExternalComponents/>
</Server>
```